DRISI

Caltrans Division of Research, Innovation and System Information

Research Results

Increasing Highway Safety with Accessible Rest Stops

Roadside rest areas help reduce traffic collisions caused by driver fatigue

Design/ Construction

JUNE 2013

Project Title:
Update Safety Roadside Rest Area Master Plan

Task Number: 2049
Completion Date: September 30, 2011

This task identified priority locations for rest area improvements and installations based on collision and usage data to reduce fatigue-related collisions.

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WHAT WAS THE NEED?

Based on historical data, driver fatigue accounts for close to 10% of collisions in California. One study found that 1.3% of collisions were attributed to reported fatigue, with an additional 9.7% of collisions highly likely to be fatigue-related. Fatigue-related collisions tend to be more severe, with some having a major economic impact. For example, occurrences of commercial vehicle fatigue collisions have destroyed bridges over interstate highways, disrupting the transportation system as well as the economy. Yet many incidents that are caused from driver fatigue can be avoided with safety roadside rest areas (SRRAs). Both fatigue and non-fatigue collisions tend to decrease significantly within 10 miles after a rest area. Studies have shown that collisions due to fatigue climbed about 30 miles from rest areas, while non-fatigue collisions remained the same.

Rest areas reduce drowsy and fatigue-related driving. If SRRAs are not available, some motorists use informal rest areas, such as roadway shoulders, as an alternative. Although roadsides offer a place to rest, they pose risks to personal safety as well as increase the chance of collision when drivers attempt to merge back into traffic.

In addition to improving safety, well-kept rest areas provide an inviting welcome for tourists, a benefit to local economies, a means to showcase sustainable design and energy use, and an opportunity to develop partnerships with the private sector. By developing flexible, long-term, and cost-effective strategies, the state can construct and maintain optimally placed SRRAs.

Eastbound Donner rest area

WHAT WAS OUR GOAL?

The objective was to update the Caltrans SRRA Master Plan and to present recommendations to implement highway safety enhancements through the construction and maintenance of SRRAs.

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WHAT DID WE DO?

Caltrans, in partnership with the University of California, Berkeley Traffic Safety Center, incorporated the findings from previous studies that focused on reducing accidents involving driver fatigue as well as public-private partnership possibilities to identify and prioritize locations for new and refurbished rest areas. The research team focused on the following to develop an SRRA strategy**:**

- Identified risk factors associated with long driving times when rest areas are not available.
- Assessed user needs and identified usage rates and other factors to gauge the adequacy of existing facilities.
- Examined existing SRRAs in the United States and Europe that were implemented through public-private partnerships.
- Determined the viability of developing public-private partnerships for rest opportunities.
- Developed innovative strategies to program and construct SRRAs in California.
- Incorporated the data and findings in an updated version of the 2000 SRRA Master Plan, providing a resource for Caltrans to improve commercial vehicle operations by identifying and addressing parking shortages as required by federal law.

Buttonwillow rest area

WHAT WAS THE OUTCOME?

The study found that despite SRRAs' positive impact, the construction of new rest areas has not kept pace with the growing needs of motorists. The research identified 22 highway segments needing new rest area services and 11 high-priority regions. The importance of safe rest opportunities has not been fully recognized, which presents an obstacle to enhancing the program. To help address this barrier, the research produced defensible measures for prioritizing SRRA improvements, along with analysis of legal and institutional frameworks to recommend innovative partnership strategies and model business plans for promising locations. The project produced the updated *Safety Roadside Rest Area Master Plan*, which presents recommendations for SRRA improvements, along with tables and maps.

WHAT IS THE BENEFIT?

Providing rest areas at critical locations, as well as spaced 30 to 60 miles apart, lowers the incidents caused by driver fatigue, reduces major damage to the transport infrastructure, and enhances roadway commerce and tourism. Budgetary constraints have limited the construction and maintenance of SRRAs. The updated SRRA Master Plan identifies where SRRAs are most needed and presents cost-saving strategies for expanding the system, such as developing public-private partnerships.

LEARN MORE

To view the complete report:
www.dot.ca.gov/research/researchreports/dri_reports.htm

To view the Safety Roadside Rest Area Master Plan:
www.dot.ca.gov/hq/LandArch/srra/docs/11_Final_SRRA_Master_Plan_Report.pdf

Overnight truck parking at Dunnigan rest area